

WHAT IS CLAIMED IS:

1. An isolated nucleic acid molecule selected from the group consisting of:
 - a) a nucleic acid molecule having a nucleotide sequence which is at least 90% identical to the nucleotide sequence of any of SEQ ID NOs:1, 3, 5, 7, and 9, or a complement thereof;
 - 5 b) a nucleic acid molecule comprising at least 15 nucleotide residues and having a nucleotide sequence identical to at least 15 consecutive nucleotide residues of any of SEQ ID NOs:1, 3, 5, 7, and 9, or a complement thereof;
 - c) a nucleic acid molecule which encodes a polypeptide comprising the amino acid sequence of any of SEQ ID NOs:2, 4, 6, 8, and 10;
 - 10 d) a nucleic acid molecule which encodes a fragment of a polypeptide comprising the amino acid sequence of any of SEQ ID NOs:2, 4, 6, 8, and 10, wherein the fragment comprises at least 10 consecutive amino acid residues of any of SEQ ID NOs:2, 4, 6, 8, and 10;
 - e) a nucleic acid molecule which encodes a fragment of a polypeptide comprising the amino acid sequence of any of SEQ ID NOs:2, 4, 6, 8, and 10, wherein the fragment comprises
15 consecutive amino acid residues corresponding to at least half of the full length of any of SEQ ID NOs:2, 4, 6, 8, and 10; and
 - f) a nucleic acid molecule which encodes a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence of any of SEQ ID NOs:2, 4, 6, 8, and 10, wherein the nucleic acid molecule hybridizes with a nucleic acid molecule consisting of the
20 nucleotide sequence of any of SEQ ID NOs:1, 3, 5, 7, and 9, or a complement thereof under stringent conditions.
2. The isolated nucleic acid molecule of claim 1, which is selected from the group consisting of:
 - a) a nucleic acid having the nucleotide sequence of any of SEQ ID NOs:1, 3, 5, 7, and 9,
25 or a complement thereof; and
 - b) a nucleic acid molecule which encodes a polypeptide having the amino acid sequence of any of SEQ ID NOs:2, 4, 6, 8, and 10, or a complement thereof.
3. The nucleic acid molecule of claim 1, further comprising vector nucleic acid sequences.

4. The nucleic acid molecule of claim 1 further comprising nucleic acid sequences encoding a heterologous polypeptide.


5. A host cell which contains the nucleic acid molecule of claim 1.

6. The host cell of claim 5 which is a mammalian host cell.

5 7. A non-human mammalian host cell containing the nucleic acid molecule of claim 1.

8. An isolated polypeptide selected from the group consisting of:

a) a fragment of a polypeptide comprising the amino acid sequence of any of SEQ ID NOs:2, 4, 6, 8, and 10;

 10 b) a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence of any of SEQ ID NOs:2, 4, 6, 8, and 10, wherein the polypeptide is encoded by a nucleic acid molecule which hybridizes with a nucleic acid molecule consisting of the nucleotide sequence of any of SEQ ID NOs:1, 3, 5, 7, and 9, or a complement thereof under stringent conditions; and

15 c) a polypeptide which is encoded by a nucleic acid molecule comprising a nucleotide sequence which is at least 90% identical to a nucleic acid consisting of the nucleotide sequence of any of SEQ ID NOs:1, 3, 5, 7, and 9, or a complement thereof.

9. The isolated polypeptide of claim 8 having the amino acid sequence of any of SEQ ID NOs:2, 4, 6, 8, and 10.

20 10. The polypeptide of claim 8, wherein the amino acid sequence of the polypeptide further comprises heterologous amino acid residues.

11. An antibody which selectively binds with the polypeptide of claim 8.

12. A method for producing a polypeptide selected from the group consisting of:

a) a polypeptide comprising the amino acid sequence of any of SEQ ID NOs:2, 4, 6, 8, and 10;

b) a polypeptide comprising a fragment of the amino acid sequence of any of SEQ ID NOs:2, 4, 6, 8, and 10, wherein the fragment comprises at least 10 contiguous amino acids of any of SEQ ID NOs:2, 4, 6, 8, and 10; and

c) a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence of any of SEQ ID NOs:2, 4, 6, 8, and 10, or a complement thereof, wherein the polypeptide is encoded by a nucleic acid molecule which hybridizes with a nucleic acid molecule consisting of the nucleotide sequence of any of SEQ ID NOs:1, 3, 5, 7, and 9, or a complement thereof under stringent conditions;

the method comprising culturing the host cell of claim 5 under conditions in which the nucleic acid molecule is expressed.

13. A method for detecting the presence of a polypeptide of claim 8 in a sample, comprising:

a) contacting the sample with a compound which selectively binds with a polypeptide of claim 8; and

b) determining whether the compound binds with the polypeptide in the sample.

14. The method of claim 13, wherein the compound which binds with the polypeptide is an antibody.

15. A kit comprising a compound which selectively binds with a polypeptide of claim 8 and instructions for use.

16. A method for detecting the presence of a nucleic acid molecule of claim 1 in a sample, comprising the steps of:

a) contacting the sample with a nucleic acid probe or primer which selectively hybridizes with the nucleic acid molecule; and

b) determining whether the nucleic acid probe or primer binds with a nucleic acid molecule in the sample.

17. The method of claim 16, wherein the sample comprises mRNA molecules and is contacted with a nucleic acid probe.

18. A kit comprising a compound which selectively hybridizes with a nucleic acid molecule of claim 1 and instructions for use.

19. A method for identifying a compound which binds with a polypeptide of claim 8 comprising the steps of:

a) contacting a polypeptide, or a cell expressing a polypeptide of claim 8 with a test compound; and

b) determining whether the polypeptide binds with the test compound.

20. The method of claim 19, wherein the binding of the test compound to the polypeptide is detected by a method selected from the group consisting of:

a) detection of binding by direct detecting of test compound/polypeptide binding;

b) detection of binding using a competition binding assay; and

c) detection of binding using an assay for an activity characteristic of the polypeptide.

21. A method for modulating the activity of a polypeptide of claim 8 comprising contacting a polypeptide or a cell expressing a polypeptide of claim 8 with a compound which binds with the polypeptide in a sufficient concentration to modulate the activity of the polypeptide.

22. A method for identifying a compound which modulates the activity of a polypeptide of claim 8, comprising:

a) contacting a polypeptide of claim 8 with a test compound; and

b) determining the effect of the test compound on the activity of the polypeptide to thereby identify a compound which modulates the activity of the polypeptide.

23. An antibody substance which selectively binds with the polypeptide of claim 8.

24. A method of making an antibody substance which selectively binds with the polypeptide of claim 8, the method comprising providing the polypeptide to an immunocompetent vertebrate and thereafter harvesting from the vertebrate blood or serum comprising the antibody substance.

5 25. A method of making an antibody substance which selectively binds with the polypeptide of claim 8, the method comprising contacting the polypeptide with a plurality of particles which individually comprise an antibody substance and a nucleic acid encoding the antibody substance, segregating a particle which selectively binds with the polypeptide, and expressing the antibody substance from the nucleic acid of the segregated particle.

10 26. The isolated nucleic acid of claim 1, wherein the isolated nucleic acid comprises a portion having the nucleotide sequence SEQ ID NO:1.

27. The isolated nucleic acid of claim 1, wherein the isolated nucleic acid comprises a portion having the nucleotide sequence SEQ ID NO:3.

15 28. The isolated nucleic acid of claim 1, wherein the isolated nucleic acid comprises a portion having the nucleotide sequence SEQ ID NO:5.

29. The isolated nucleic acid of claim 1, wherein the isolated nucleic acid comprises a portion having the nucleotide sequence SEQ ID NO:7.

30. The isolated nucleic acid of claim 1, wherein the isolated nucleic acid comprises a portion having the nucleotide sequence SEQ ID NO:9.

20 31. The isolated polypeptide of claim 8, wherein the amino acid sequence of the isolated polypeptide is SEQ ID NO:2.

32. The isolated polypeptide of claim 8, wherein the amino acid sequence of the isolated polypeptide is SEQ ID NO:4.

33. The isolated polypeptide of claim 8, wherein the amino acid sequence of the isolated polypeptide is SEQ ID NO:6.

34. The isolated polypeptide of claim 8, wherein the amino acid sequence of the isolated polypeptide is SEQ ID NO:8.

5 35. The isolated polypeptide of claim 8, wherein the amino acid sequence of the isolated polypeptide is SEQ ID NO:10.